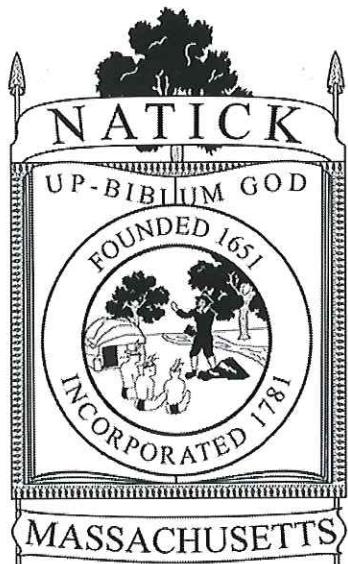


Town of Natick

Study of Unaccepted Ways



June 2012

Updated January 20, 2016

Town of Natick

Department of Public Works

TABLE OF CONTENTS

| <u>SECTION</u> | <u>PAGE</u> |
|----------------------------|-------------|
| Section 1: Overview | 1 |
| Section 2: Process | 2 |
| Section 3: Results | 3 |
| Section 4: Detail | 4-16 |

SECTION 1: OVERVIEW

The Town of Natick has approximately one hundred fifty four (154) miles of paved streets and roads (Accepted and Unaccepted). The town has 26.27 miles of unaccepted roads with 1.09 miles being gravel roads and 25.18 miles being paved. Unaccepted roads typically do not meet town specifications required for acceptance at Town Meeting with the exception of roadways in new subdivisions that are not yet accepted.

Unaccepted ways are not maintained or improved by the town; however, for safe passage of emergency vehicles, the town will remove downed trees in the roadway, patch potholes and perform snow removal operations.

SECTION 2: PROCESS

Cost estimating is very labor intensive and therefore requires significant time and money to complete. This study limits the scope of that work by only reviewing five (5) unaccepted ways. We will estimate the town wide cost of upgrading unaccepted ways by extrapolating the unit costs of these five ways. They were chosen due to their specific characteristics: Two only require small improvements, two require extensive improvements and one roadway falls between these two categories. The unaccepted ways require different levels of improvements to meet minimum town specifications.

SECTION 3: RESULTS

The following table highlights the study results:

| | Evergreen Road | South Street | Dover Road | Cemetery Street | Kendall Lane |
|------------------------------------|---------------------------|---------------------|-------------------|----------------------------|-------------------------|
| Approximate Linear Feet | 2,900 | 5,820 | 1,110 | 1,100 | 2,480 |
| Cost Estimate (\$) | 631,113 | 687,406 | 359,950 | 436,575 | 507,925 |
| Cost per LF (\$) | 218 | 118 | 324 | 397 | 205 |

There is approximately 138,700 linear feet of accepted roadways town wide. As can be seen from the above table, the repair cost per linear foot can vary greatly depending on the type of roadway, the type/method of repair required and many other factors (i.e. drainage, sidewalks). This study indicates an average cost per linear foot of \$252.40. The median cost of the roadways reviewed is \$218.00. Given those numbers, we estimate the cost of improving unaccepted public ways to meet minimum town specifications to be approximately \$35 million (with the noted exceptions in the attached document).

Evergreen Road (Approximate Length 2900 Feet)

The attached estimate of \$631,113.00 is based on the following:

- A Street Layout and Street Acceptance plan will be required. The proposed street layout will be based on the current frontages of all the abutting properties. The abutters will not contest the Street Acceptance process.
- It is assumed that all the proposed work will fit within the layout. Therefore no land takings or easements have been included.
- There is no formal drainage system. The current paved way as well as the proposed work will depend on "Country Drainage".
- No sidewalks or curbing currently exists and none is proposed.
- Upgrades to the existing Town utilities within the way not included in this estimate.
- The existing roadway pavement will be reclaimed in place, graded and paved to consistent width of 20 feet.

South Street (Approximate Length 5820 Feet)

The attached estimate of \$687,406.00 is based on the following:

- A Street Layout and Street Acceptance plan will be required. The proposed street layout will be based on the current frontages of all the abutting properties. The abutters will not contest the Street Acceptance process.
- It is assumed that all the proposed work will fit within the layout. Therefore no land takings or easements have been included.
- There is no formal drainage system. The current paved way as well as the proposed work will depend on "Country Drainage".
- No sidewalks or curbing currently exists and none is proposed.
- Upgrades to the existing Town utilities within the way not included in this estimate.
- The existing roadway pavement will be reclaimed in place, graded and paved to consistent width of 20 feet.
- The culvert and headwalls at Indian Brook will be replaced.
- The existing stone walls will remain on private property (Town not responsible for maintenance)
- Approximately 800 feet of new Guard Rail will be required.

Dover Road (Approximate Length 1110 Feet)

The attached estimate of \$359,950.00 is based on the following:

- A Street Layout and Street Acceptance plan will be required. The proposed street layout will be based on the current frontages of all the abutting properties. The abutters will not contest the Street Acceptance process.
- It is assumed that all the proposed work will fit within the layout. Therefore no land takings or easements have been included.
- Upgrades to the existing Town utilities within the way not included in this estimate.
- Granite Curbing and a Bituminous Concrete sidewalk to be added on the northerly side of the street, and Cape Cod berm installed on the southerly side.
- Extend the existing closed piped drainage system.
- The existing roadway pavement will be resurfaced (Leveled and Overlaid) to its current width.

Cemetery Street (Approximate Length 1100 Feet)

The attached estimate of \$436,575.00 is based on the following:

- A Street Layout and Street Acceptance plan will be required. The proposed street layout will be based on the current frontages of all the abutting properties. The abutters will not contest the Street Acceptance process.
- It is assumed that all the proposed work will fit within the layout. Therefore no land takings or easements have been included.
- Upgrades to the existing Town utilities within the way not included in this estimate.
- Granite Curbing and a Bituminous Concrete sidewalk to be added on the westerly side of the street, and Cape Cod berm installed on the easterly side.
- Approximately 100 feet of retaining walls required to construct the sidewalk.
- Extend the existing closed piped drainage system.
- The existing roadway pavement will be resurfaced (Leveled and Overlaid) to its current width.

Kendall Lane (Approximate Length 2480 Feet)

The attached estimate of \$507,925.00 is based on the following:

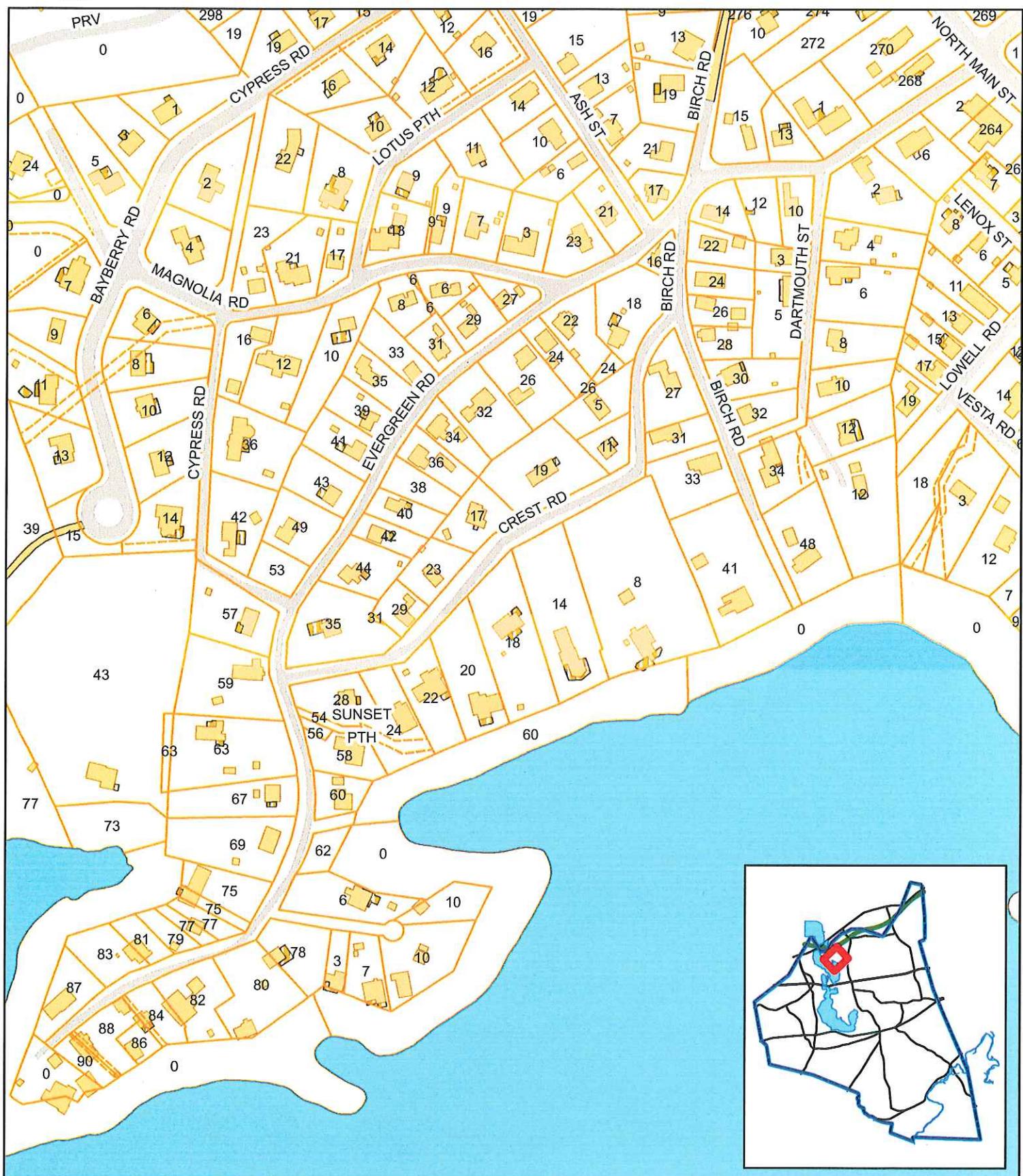
- A Street Layout and Street Acceptance plan will be required. The proposed street layout will be based on the current frontages of all the abutting properties. The abutters will not contest the Street Acceptance process.
- It is assumed that all the proposed work will fit within the layout. Therefore no land takings or easements have been included.
- Upgrades to the existing Town utilities within the way not included in this estimate.
- On the easterly side of the road the existing granite curbing will be removed and reset, and new vertical granite curbing added where none currently exists. On the westerly side of the road install Cape Cod berm.
- The existing sidewalk on the easterly side of the road will be rebuilt.
- Extend the existing closed piped drainage system.
- The existing roadway pavement will be milled and then receive a 1-1/2" overlay. The current width of the road will remain the same.
- It is assumed that Natick Green/Village Condos will be responsible for the brick inlays that they installed within Kendall Lane.

Evergreen Road - Roadway Improvements
(Approximate Length 2900 feet)

| Item No. | Est. Quantity | Unit | Description of Work | Unit Price | Total Amount |
|----------|---------------|------|--|--------------|---------------------|
| 101 | 0.2 | acre | Clearing and Grubbing | \$ 20,000.00 | \$4,000.00 |
| 120.1 | 400 | CY | Unclassified Excavation | \$ 28.00 | \$11,200.00 |
| 121 | 2 | CY | Class A Rock Excavation | \$ 125.00 | \$250.00 |
| 151 | 300 | CY | Gravel Borrow | \$ 25.00 | \$7,500.00 |
| 358 | 20 | each | Gate Box Adjusted | \$ 125.00 | \$2,500.00 |
| 403 | 12940 | SY | Reclaim Base Course | \$ 5.00 | \$64,700.00 |
| 460 | 2878 | Tons | Hot Mix Asphalt | \$ 80.00 | \$230,240.00 |
| 472 | 20 | Tons | Hot Mix Asphalt for Miscellaneous Work | \$ 125.00 | \$2,500.00 |
| 703.11 | 360 | Tons | Hot Mix Asphalt Driveway Apron | \$ 125.00 | \$45,000.00 |
| 715 | 48 | each | Rural Mail Box Removed and Reset | \$ 150.00 | \$7,200.00 |
| 751 | 2000 | SY | Loam Borrow | \$ 5.00 | \$10,000.00 |
| 765 | 2000 | SY | Seeding | \$ 2.00 | \$4,000.00 |
| 767.8 | 1000 | each | Bales of Hay for Erosion Control | \$ 12.00 | \$12,000.00 |
| 999.001 | 480 | HR | Traffic Police | \$ 60.00 | \$28,800.00 |
| | 1 | LS | Survey - Create Street Layout & Acceptance Plans | \$ 75,000.00 | \$75,000.00 |
| | | | | Subtotal | \$504,890.00 |
| | | | 25% Engineering & Contingencies | | \$126,222.50 |
| | | | | Total | \$631,112.50 |



Evergreen Road



Natick DPW-GIS DIVISION
75 West Street
Natick, Mass. 01760
June 14, 2012

0 75 150 300

Feet

1 inch = 250 feet

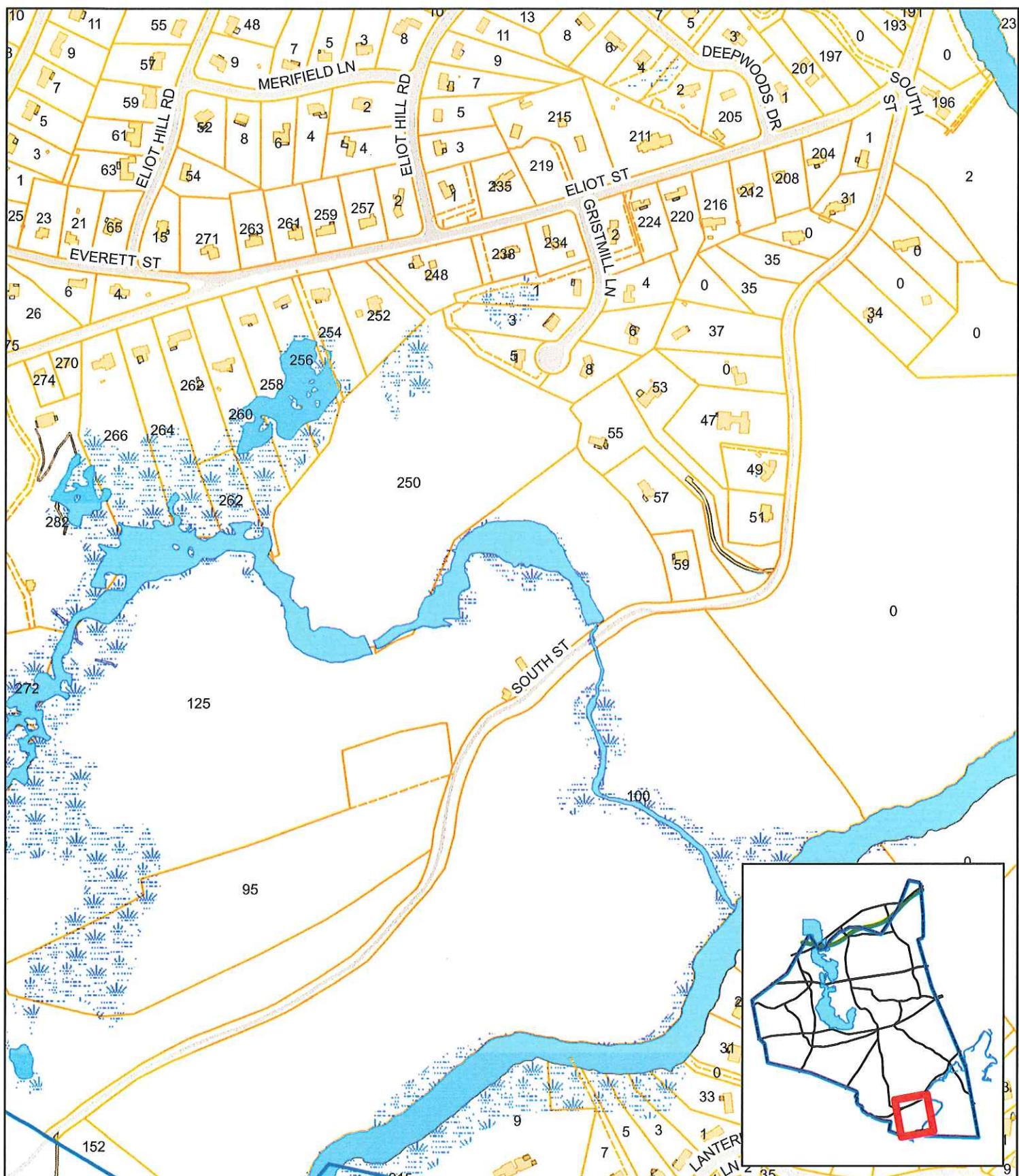
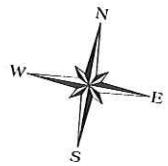
DISCLAIMER: The information depicted by these data are for planning purposes only. They may not be adequate for legal boundary definition, regulatory interpretation or conveyancing purposes.

South Street Roadway Improvements
(Approximate Length 5820 feet)

| Item No. | Est. Quantity | Unit | Description of Work | Unit Price | Total Amount |
|----------|---------------|------|---|--------------|---------------------|
| 101 | 0.2 | acre | Clearing and Grubbing | \$ 20,000.00 | \$4,000.00 |
| 120.1 | 100 | CY | Unclassified Excavation | \$ 28.00 | \$2,800.00 |
| 121 | 4 | CY | Class A Rock Excavation | \$ 125.00 | \$500.00 |
| 151 | 100 | CY | Gravel Borrow | \$ 25.00 | \$2,500.00 |
| 230 | 1 | LS | Replace culvert and stone headwalls @ Indian Brook | \$ 50,000.00 | \$50,000.00 |
| 258 | 60 | SY | Stone for Pipe Ends & Guard Rail/Retaining Wall Detail | \$ 150.00 | \$9,000.00 |
| 358 | 5 | each | Gate Box Adjusted | \$ 125.00 | \$625.00 |
| 403 | 17740 | SY | Reclaim Base Course | \$ 5.00 | \$88,700.00 |
| 460 | 2610 | Tons | Hot Mix Asphalt | \$ 80.00 | \$208,800.00 |
| 472 | 50 | Tons | Hot Mix Asphalt for Miscellaneous Work | \$ 125.00 | \$6,250.00 |
| 620.1 | 800 | LF | Steel W Beam Highway Guard - Single Face | \$ 50.00 | \$40,000.00 |
| 627.2 | 2 | each | Steel W Beam Highway Guard Terminal Section - Single Face | \$ 100.00 | \$200.00 |
| 703.11 | 120 | Tons | Hot Mix Asphalt Driveway Apron | \$ 125.00 | \$15,000.00 |
| 715 | 15 | each | Rural Mail Box Removed and Reset | \$ 150.00 | \$2,250.00 |
| 751 | 3500 | SY | Loam Borrow | \$ 5.00 | \$17,500.00 |
| 765 | 3500 | SY | Seeding | \$ 2.00 | \$7,000.00 |
| 767.8 | 500 | each | Bales of Hay for Erosion Control | \$ 12.00 | \$6,000.00 |
| 999.001 | 480 | HR | Traffic Police | \$ 60.00 | \$28,800.00 |
| | 1 | LS | Survey - Create Street Layout & Acceptance Plans | \$ 60,000.00 | \$60,000.00 |
| | | | | Subtotal | \$549,925.00 |
| | | | 25% Engineering & Contingencies | | \$137,481.25 |
| | | | | Total | \$687,406.25 |



South Street



Natick DPW-GIS DIVISION
75 West Street
Natick, Mass. 01760
June 14, 2012

0 150 300 600
Feet
1 inch = 500 feet

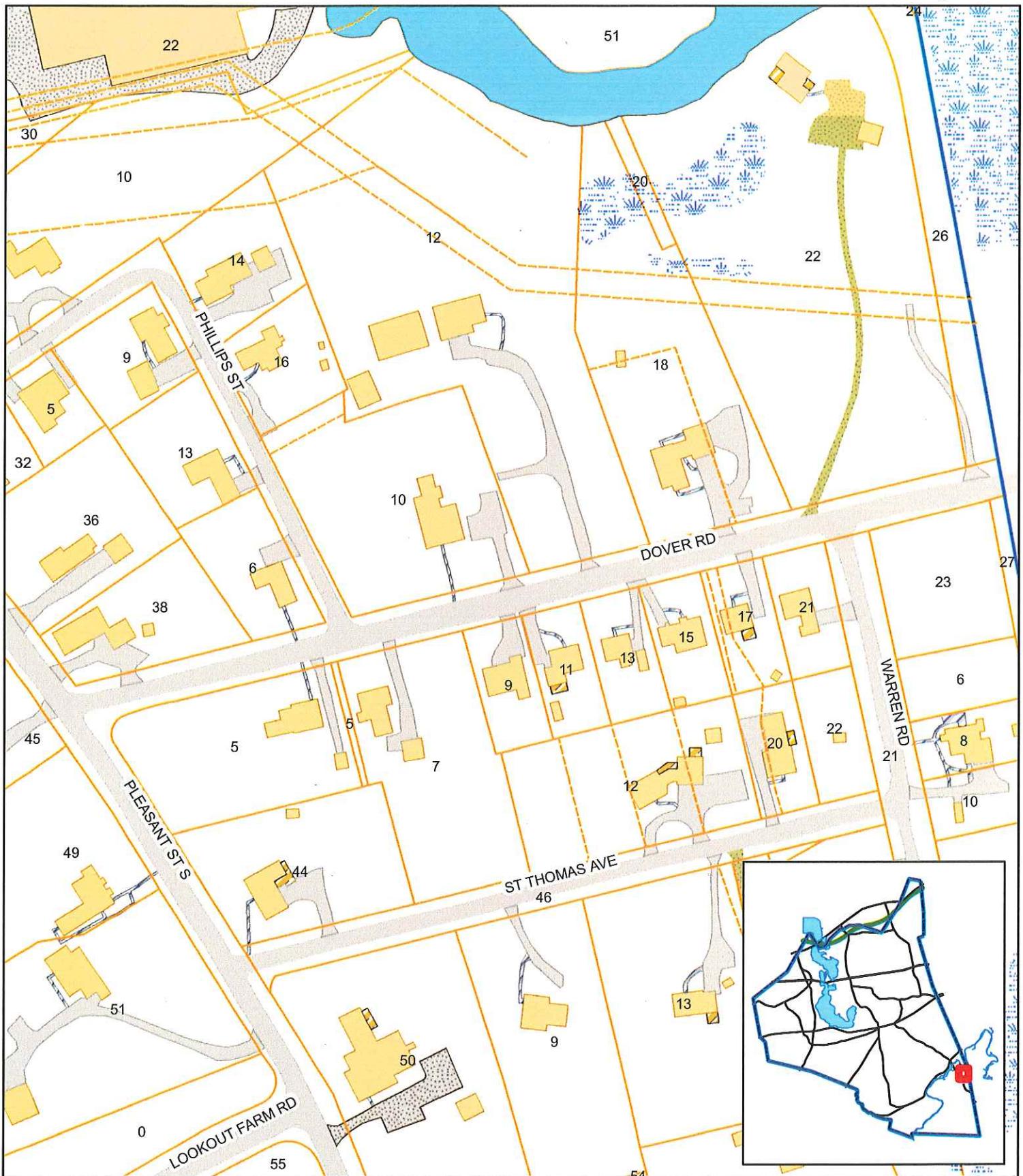
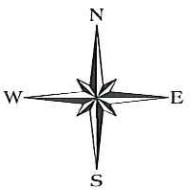
DISCLAIMER: The information depicted by these data are for planning purposes only. They may not be adequate for legal boundary definition, regulatory interpretation or conveyancing purposes.

Dover Road Roadway Improvements
(Approximate Length 1110 feet)

| Item No. | Est. Quantity | Unit | Description of Work | Unit Price | Total Amount |
|----------|---------------|------|---|--------------|---------------------|
| 101 | 0.1 | acre | Clearing and Grubbing | \$ 20,000.00 | \$2,000.00 |
| 120.1 | 230 | CY | Unclassified Excavation | \$ 28.00 | \$6,440.00 |
| 121 | 2 | CY | Class A Rock Excavation | \$ 125.00 | \$250.00 |
| 151 | 150 | CY | Gravel Borrow | \$ 25.00 | \$3,750.00 |
| 156 | 180 | CY | Crushed Stone for Drainage Revet and/or WW Foundation | \$ 30.00 | \$5,400.00 |
| 170 | 670 | SY | Fine Grading and Compacting | \$ 3.00 | \$2,010.00 |
| 201.5 | 5 | each | Catch Basin - Municipal Standard | \$ 3,000.00 | \$15,000.00 |
| 202.01 | 3 | each | Manhole - Municipal Standard | \$ 3,000.00 | \$9,000.00 |
| 220 | 2 | each | Drainage Structure Adjusted | \$ 175.00 | \$350.00 |
| 222.2 | 8 | each | Frame and Grate (or Cover) Municipal Standard | \$ 600.00 | \$4,800.00 |
| 224.12 | 7 | each | 12 inch Hood | \$ 400.00 | \$2,800.00 |
| 241.12 | 600 | LF | 12 inch Reinforced Concrete Pipe | \$ 70.00 | \$42,000.00 |
| 358 | 7 | each | Gate Box Adjusted | \$ 125.00 | \$875.00 |
| 460 | 575 | Tons | Hot Mix Asphalt | \$ 80.00 | \$46,000.00 |
| 470.3 | 1000 | LF | Hot Mix Asphalt Berm, Modified Cape Cod | \$ 5.00 | \$5,000.00 |
| 472 | 65 | Tons | Hot Mix Asphalt for Miscellaneous Work | \$ 125.00 | \$8,125.00 |
| 504 | 1000 | LF | Granite Cub Type VA-4 Straight | \$ 38.00 | \$38,000.00 |
| 580 | 120 | LF | Curb Removed and Reset | \$ 18.00 | \$2,160.00 |
| 697 | 200 | LF | Sedimentation Fence | \$ 5.00 | \$1,000.00 |
| 701.2 | 30 | SY | Cement Concrete Wheelchair Ramp | \$ 50.00 | \$1,500.00 |
| 702 | 96 | Tons | Hot Mix Asphalt Walk Surface | \$ 125.00 | \$12,000.00 |
| 703.11 | 82 | Tons | Hot Mix Asphalt Driveway Apron | \$ 125.00 | \$10,250.00 |
| 715 | 7 | each | Rural Mail Box Removed and Reset | \$ 150.00 | \$1,050.00 |
| 751 | 1000 | SY | Loam Borrow | \$ 5.00 | \$5,000.00 |
| 765 | 1000 | SY | Seeding | \$ 2.00 | \$2,000.00 |
| 767.8 | 200 | each | Bales of Hay for Erosion Control | \$ 12.00 | \$2,400.00 |
| 999.001 | 480 | HR | Traffic Police | \$ 60.00 | \$28,800.00 |
| | 1 | LS | Survey - Create Street Layout and Acceptance Plans | \$ 30,000.00 | \$30,000.00 |
| | | | | Subtotal: | \$287,960.00 |
| | | | | | \$71,990.00 |
| | | | | Total | \$359,950.00 |



Dover Road



Natick DPW-GIS DIVISION
75 West Street
Natick, Mass. 01760
June 14, 2012

0 75 150 300

Feet
1 inch = 150 feet

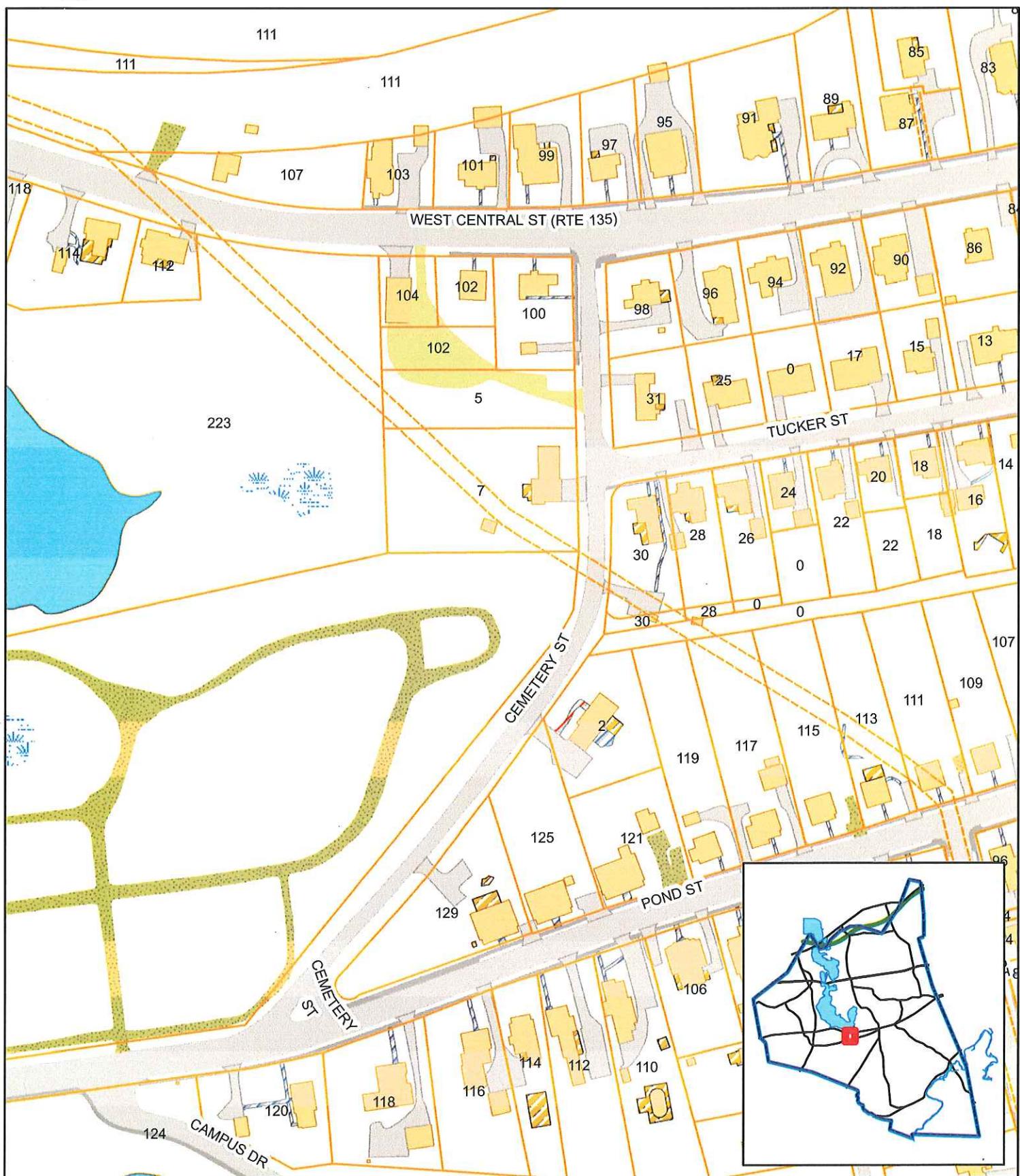
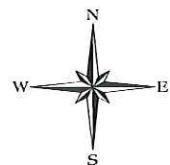
DISCLAIMER: The information depicted by these data are for planning purposes only. They may not be adequate for legal boundary definition, regulatory interpretation or conveyancing purposes.

Cemetery Street Roadway Improvements
(Approximately 1100 feet)

| Item No. | Est. Quantity | Unit | Description of Work | Unit Price | Total Amount |
|----------|---------------|------|--|--------------|---------------------|
| 101 | 0.1 | acre | Clearing and Grubbing | \$ 20,000.00 | \$2,000.00 |
| 120.1 | 250 | CY | Unclassified Excavation | \$ 28.00 | \$7,000.00 |
| 121 | 2 | CY | Class A Rock Excavation | \$ 125.00 | \$250.00 |
| 151 | 180 | CY | Gravel Borrow | \$ 25.00 | \$4,500.00 |
| 156 | 200 | CY | Crushed Stone for Drainage Revet and/or WW Foundation | \$ 30.00 | \$6,000.00 |
| 170 | 600 | SY | Fine Grading and Compacting | \$ 3.00 | \$1,800.00 |
| 201.5 | 8 | each | Catch Basin - Municipal Standard | \$ 3,000.00 | \$24,000.00 |
| 202.01 | 6 | each | Manhole - Municipal Standard | \$ 3,000.00 | \$18,000.00 |
| 206.6 | 1 | each | Precast Concrete Headwall With Wingwalls | \$ 1,000.00 | \$1,000.00 |
| 220 | 14 | each | Drainage Structure Adjusted | \$ 175.00 | \$2,450.00 |
| 220.7 | 2 | each | Sanitary Structure Adjusted | \$ 175.00 | \$350.00 |
| 222.2 | 14 | each | Frame and Grate (or Cover) Municipal Standard | \$ 600.00 | \$8,400.00 |
| 224.12 | 8 | each | 12 inch Hood | \$ 400.00 | \$3,200.00 |
| 241.12 | 1200 | LF | 12 inch Reinforced Concrete Pipe | \$ 70.00 | \$84,000.00 |
| 258 | 10 | SY | Stone for Pipe Ends & Guard Rail/Retaining Wall Detail | \$ 150.00 | \$1,500.00 |
| 358 | 3 | each | Gate Box Adjusted | \$ 125.00 | \$375.00 |
| 460 | 530 | Tons | Hot Mix Asphalt | \$ 80.00 | \$42,400.00 |
| 470.3 | 900 | LF | Hot Mix Asphalt Berm, Modified Cape Cod | \$ 5.00 | \$4,500.00 |
| 472 | 75 | Tons | Hot Mix Asphalt for Miscellaneous Work | \$ 125.00 | \$9,375.00 |
| 504 | 900 | LF | Granite Cub Type VA-4 Straight | \$ 38.00 | \$34,200.00 |
| 580 | 120 | LF | Curb Removed and Reset | \$ 18.00 | \$2,160.00 |
| 697 | 500 | LF | Sedimentation Fence | \$ 5.00 | \$2,500.00 |
| 701.2 | 30 | SY | Cement Concrete Wheelchair Ramp | \$ 50.00 | \$1,500.00 |
| 702 | 85 | Tons | Hot Mix Asphalt Walk Surface | \$ 125.00 | \$10,625.00 |
| 703.11 | 35 | Tons | Hot Mix Asphalt Driveway Apron | \$ 125.00 | \$4,375.00 |
| 751 | 1200 | SY | Loam Borrow | \$ 5.00 | \$6,000.00 |
| 765 | 1200 | SY | Seeding | \$ 2.00 | \$2,400.00 |
| 874.45 | 6 | each | Miscellaneous Signs Removed and Reset | \$ 100.00 | \$600.00 |
| 999.001 | 480 | HR | Traffic Police | \$ 60.00 | \$28,800.00 |
| | 100 | LF | Retaining Wall | \$ 50.00 | \$5,000.00 |
| | 1 | LS | Survey - Create Street Layout and Acceptance Plans | \$ 30,000.00 | \$30,000.00 |
| | | | | Subtotal: | \$349,260.00 |
| | | | | | \$87,315.00 |
| | | | | Total: | \$436,575.00 |



Cemetery Street

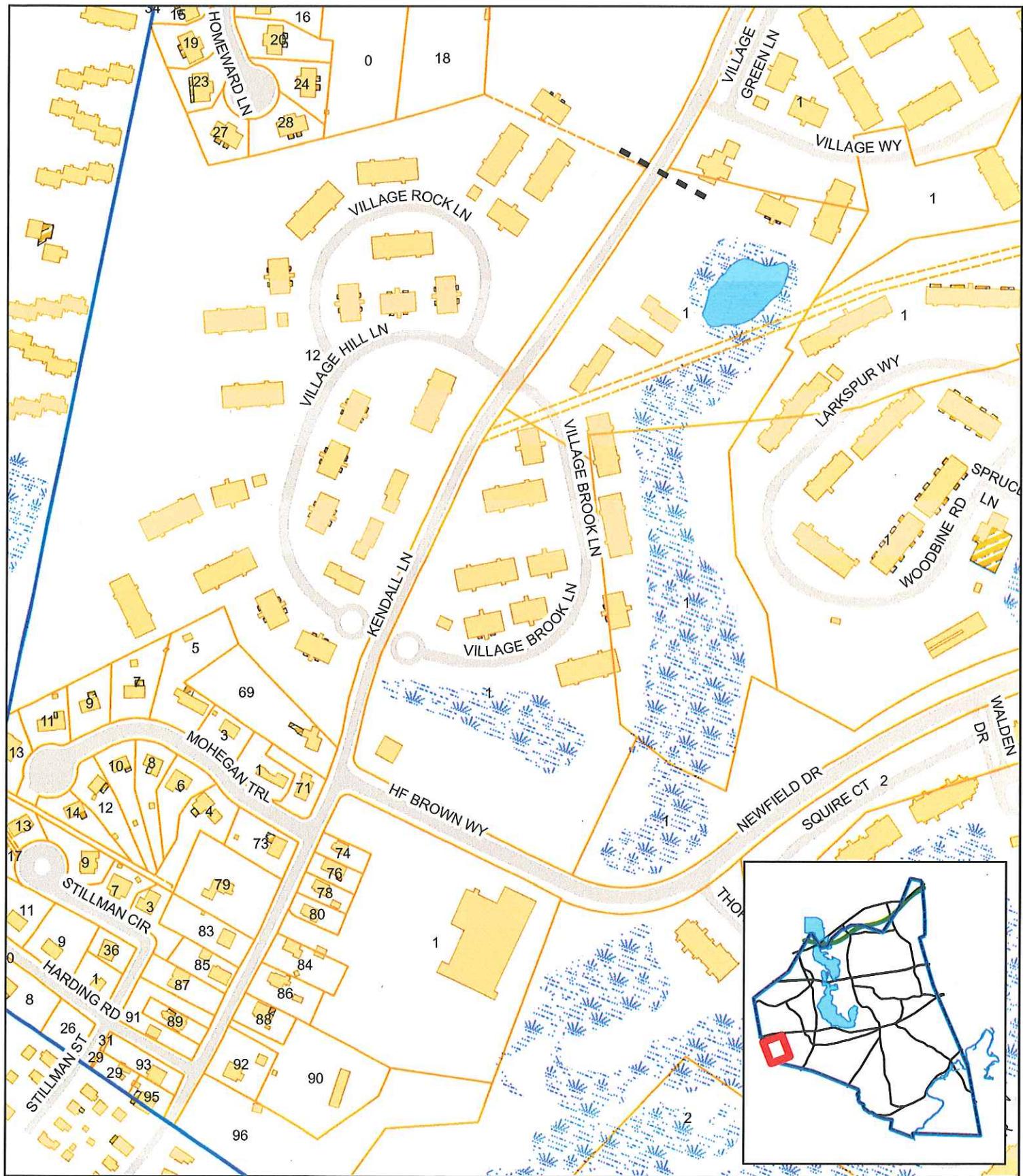
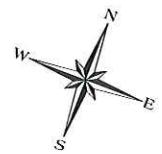


Kendall Lane Roadway Improvements
(Approximate Length 2480 feet)

| Item No. | Est. Quantity | Unit | Description of Work | Unit Price | | Total Amount |
|----------|---------------|------|---|--------------|-----------|---------------------|
| | | | | | | |
| 101 | 0.1 | acre | Clearing and Grubbing | \$ 20,000.00 | | \$2,000.00 |
| 120.1 | 540 | CY | Unclassified Excavation | \$ 28.00 | | \$15,120.00 |
| 121 | 2 | CY | Class A Rock Excavation | \$ 125.00 | | \$250.00 |
| 129 | 6070 | SY | Asphalt Pavement Excavation by Cold Planner | \$ 3.50 | | \$21,245.00 |
| 151 | 300 | CY | Gravel Borrow | \$ 25.00 | | \$7,500.00 |
| 156 | 180 | CY | Crushed Stone for Drainage Revet and/or WW Foundation | \$ 30.00 | | \$5,400.00 |
| 170 | 1600 | SY | Fine Grading and Compacting | \$ 3.00 | | \$4,800.00 |
| 201.5 | 8 | each | Catch Basin - Municipal Standard | \$ 3,000.00 | | \$24,000.00 |
| 202.01 | 4 | each | Manhole - Municipal Standard | \$ 3,000.00 | | \$12,000.00 |
| 220 | 14 | each | Drainage Structure Adjusted | \$ 175.00 | | \$2,450.00 |
| 222.2 | 13 | each | Frame and Grate (or Cover) Municipal Standard | \$ 600.00 | | \$7,800.00 |
| 224.12 | 8 | each | 12 inch Hood | \$ 400.00 | | \$3,200.00 |
| 241.12 | 800 | LF | 12 inch Reinforced Concrete Pipe | \$ 70.00 | | \$56,000.00 |
| 358 | 11 | each | Gate Box Adjusted | \$ 125.00 | | \$1,375.00 |
| 460 | 510 | Tons | Hot Mix Asphalt | \$ 80.00 | | \$40,800.00 |
| 470.3 | 2480 | LF | Hot Mix Asphalt Berm, Modified Cape Cod | \$ 5.00 | | \$12,400.00 |
| 472 | 60 | Tons | Hot Mix Asphalt for Miscellaneous Work | \$ 125.00 | | \$7,500.00 |
| 504 | 1500 | LF | Granite Cub Type VA-4 Straight | \$ 38.00 | | \$57,000.00 |
| 580 | 800 | LF | Curb Removed and Reset | \$ 18.00 | | \$14,400.00 |
| 697 | 200 | LF | Sedimentation Fence | \$ 5.00 | | \$1,000.00 |
| 701.2 | 30 | SY | Cement Concrete Wheelchair Ramp | \$ 50.00 | | \$1,500.00 |
| 702 | 220 | Tons | Hot Mix Asphalt Walk Surface | \$ 125.00 | | \$27,500.00 |
| 703.11 | 60 | Tons | Hot Mix Asphalt Driveway Apron | \$ 125.00 | | \$7,500.00 |
| 715 | 8 | each | Rural Mail Box Removed and Reset | \$ 150.00 | | \$1,200.00 |
| 751 | 1600 | SY | Loam Borrow | \$ 5.00 | | \$8,000.00 |
| 765 | 1600 | SY | Seeding | \$ 2.00 | | \$3,200.00 |
| 767.8 | 200 | each | Bales of Hay for Erosion Control | \$ 12.00 | | \$2,400.00 |
| 999.001 | 480 | HR | Traffic Police | \$ 60.00 | | \$28,800.00 |
| | 1 | LS | Survey - Create Street Layout and Acceptance Plans | \$ 30,000.00 | | \$30,000.00 |
| | | | | | Subtotal: | \$406,340.00 |
| | | | | | Total | \$101,585.00 |
| | | | | | | \$507,925.00 |



Kendall Lane



Natick DPW-GIS DIVISION
75 West Street
Natick, Mass. 01760
June 14, 2012

0 75 150 300

Feet

1 inch = 300 feet

DISCLAIMER: The information depicted by these data are for planning purposes only. They may not be adequate for legal boundary definition, regulatory interpretation or conveyancing purposes.